

Ammonium persulfate

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Ammonium persulfate ($(\text{NH}_4)_2\text{S}_2\text{O}_8$) is a strong oxidizing agent. It is very soluble in water; the dissolution of the salt in water is endothermic. It is a radical initiator. It is used to etch copper on printed circuit boards as an alternative to ferric chloride solution.^[1] It is also used along with tetramethylethylenediamine to catalyze the polymerization of acrylamide in making a polyacrylamide gel.

Ammonium persulfate was prepared by H. Marshall by the method used for the preparation of potassium persulfate — by the electrolysis of a solution of ammonium sulfate and sulfuric acid.^[2]

Ammonium persulfate is the main component of Nochromix. On dissolving in sulfuric acid, it is used to clean laboratory glassware as a metal-free alternative to chromic acid baths.^[3] It is also a standard ingredient in western blot gels and hair bleach.

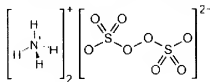
Safety

Airborne dust may be irritating to eye, nose, throat, lung and skin upon contact. Exposure to high levels of dust may cause difficulty in breathing.^[4]

References

- ↑ "Ammonium Persulfate: Copper Etchant"

Ammonium persulfate



Other names

Ammonium peroxydisulfate

Identifiers

CAS number 7727-54-0 ✓

ChemSpider 56400 ✓

UNII 22QF6L357F ✓

EC number 231-786-5

UN number 1444

RTECS SE0350000
number

SMILES

O=S(=O)([O-])OOS([O-])(=O)=O.[NH4+].[NH4+]

[NH4+].[NH4+].[O-]S(=O)(=O)OOS(=O)(=O)[O-]

InChI

InChI=1S/2H3N.H2O8S2/c;;1-9(2,3)7-8-10(4,5)6/h2*1H3;(H,1,2,3)(H,4,5,6) ✓

Key: ROOXNKNUYICQNP-UHFFFAOYSA-N ✓

InChI=1/2H3N.H2O8S2/c;;1-9(2,3)7-8-10(4,5)6/h2*1H3;(H,1,2,3)(H,4,5,6)

Key: ROOXNKNUYICQNP-UHFFFAOYAL

Properties


Molecular formula $(\text{NH}_4)_2\text{S}_2\text{O}_8$

Molar mass 228.18 g/mol

Appearance white to yellowish crystals

Density	1.98 g/cm ³
Melting point	120 °C (393 K) decomp.
Solubility in water	80 g/100 ml (25 °C)

Hazards

MSDS	External MSDS (http://www.jtbaker.com/msds/englishhtml/a6096.htm)
EU Index	016-060-00-6
EU classification	Oxidant (O) Harmful (Xn) Irritant (Xi)
R-phrases	<u>R8</u> , <u>R22</u> , <u>R36/37/38</u> , <u>R42/43</u>
S-phrases	<u>(S2)</u> , <u>S22</u> , <u>S24</u> , <u>S26</u> , <u>S37</u>
NFPA 704	

LD₅₀ 689 mg/kg, oral (rat)**Related compounds**

Other anions	Ammonium thiosulfate Ammonium sulfite Ammonium sulfate
Other cations	Sodium persulfate Potassium persulfate

✓(what is this?) (verify)

Except where noted otherwise, data are given for materials in their standard state (at 25 °C, 100 kPa)

Infobox references

(<http://www.mgchemicals.com/products/410.html>) . MG Chemicals.

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2. ^ Hugh Marshall (1891). "LXXIV. Contributions from the Chemical Laboratory of the University of Edinburgh. No. V. The persulphates". *J. Chem. Soc., Trans.* **59**: 771. doi:10.1039/CT8915900771 (<http://dx.doi.org/10.1039%2FCT8915900771>) .
3. ^ "Nochromix" (<http://www.sigmaaldrich.com/catalog/search/SpecificationSheetPage/ALDRICH/328693>) . Sigma-Aldrich. <http://www.sigmaaldrich.com/catalog/search/SpecificationSheetPage/ALDRICH/328693>. Retrieved 2008-03-01.
4. ^ [1] (http://msds.fmc.com/msds/100000010587-MSDS_US-E.pdf) FMC Corporation, MSDS sheet dated: 06/26/2009

External links

- International Chemical Safety Card 0632
(http://www.ilo.org/public/english/protection/safework/cis/products/icsc/dtasht/_icsc06/icsc0632.htm)

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